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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,083	03/10/2004	Tomoya Sasaki	Q79878	2686
23373	7590	11/16/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LEE, SIN J	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/796,083	SASAKI, TOMOYA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sin J. Lee	1752	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/10/04 &amp; 9/29/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

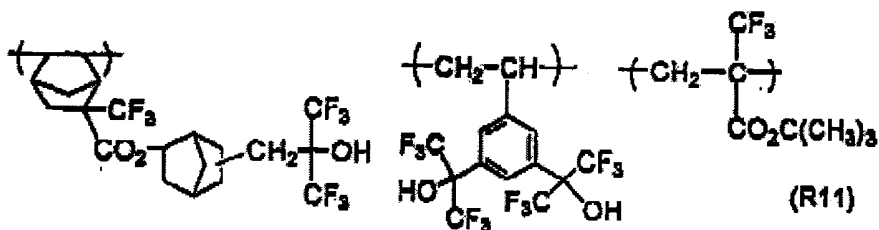
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Mizutani et al (EP 1 367 440 A2).

In Example 4-11 (see Table 4-2 on pg.125), Mizutani teaches a positive working resist composition containing Resin (R11), Acid generator (VII-53)/(II-1f), an organic basic compound, and a surfactant.

Resin (R11) has the following structure;



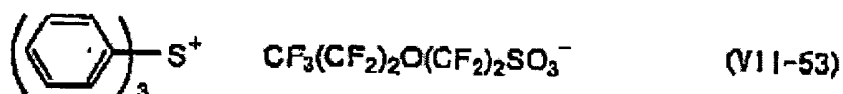
The second repeat unit of R11 shown above teaches present repeat unit of claim 1 having at least two groups represented by the formula (Z) and present repeat unit of the formula (I) of claim 2. The first repeat unit of R11 teaches present repeat unit of the formula (II) of claim 1 (in the present formula (II), r is 0, both of Rb's are H atoms, Rb' is a trifluoromethyl group (an organic group) of claim 7, L<sub>3</sub> is a single bond, A<sub>1</sub> is the formula (A<sub>1</sub>) in which m is 0, Z<sub>1</sub> is a norbornane residue (an alicyclic hydrocarbon group

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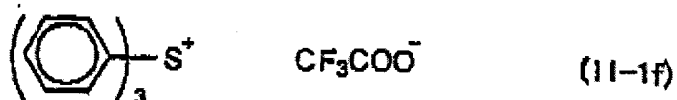
having a valence of 2) of claim 5,  $L_2$  is  $-\text{CH}_2-\text{C}(\text{CF}_3)_2-$  (a bivalent connecting group), X is a hydroxyl group, and p is 1). The third repeat unit of R11 teaches present repeat unit of the formula (VIII) of claim 4. Therefore, the prior art teaches present inventions of claims 1-7, 12, and 13.

Mizutani also teaches the use of a non-polymeric inhibitor (see pg.8, lines 20-26, pg.10, line 46, pg.105 ([0371])). Therefore, the prior art teaches present invention of claim 8.

As discussed above, in Example 4-11, Mizutani uses Acid generators (VII-53) and (II-1f). The photoacid generator (VII-53) has the following structure;



and the photoacid generator (II-1f) has the following structure;



Therefore, Mizutani teaches present (B1) of claim 9 as well as present (B2) of claim 11. Therefore, the prior art teaches present inventions of claims 9 and 11.

With respect to present claim 10, as discussed above, Mizutani uses a photoacid generator that produces a fluorine-containing sulfonic acid and a photoacid generator that produces a carboxylic acid. Furthermore, on pg.11, lines 34-36, Mizutani teaches the equivalence of (a) using a photoacid generator that produces a fluorine-containing sulfonic acid together with a photoacid generator that produces a fluorine-free sulfonic

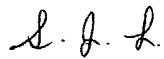
acid and (b) using a photoacid generator that produces a fluorine-containing sulfonic acid together with a photoacid generator that produces a carboxylic acid. Based on this teaching of equivalency, and also based on Examples 4-4 and 4-10 (in which Mizutani uses (VII-36) (a photoacid generator that produces a fluorine-containing sulfonic acid) together with (PAG4-1) (a photoacid generator that produces a fluorine-free sulfonic acid), one of ordinary skill in the art would immediately envisage using Mizutani's (VII-53) (a photoacid generator that produces a fluorine-containing sulfonic acid) together with (PAG4-1) (instead of (II-1f)) in his Example 4-11. Therefore, the prior art teaches present invention of claim 10.

Mizutani spin-coats his positive working resist solution onto a silicon wafer to form a resist layer. The resist layer is patternwise exposed to light from a KrF microstepper through a mask, and then the resin layer is subjected to development to obtain a resist pattern (see [0452]). Thus, the prior art teaches present invention of claim 14.

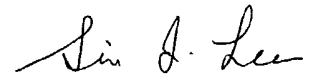
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee  
November 12, 2004



Sin J. Lee  
Patent Examiner  
Technology Center  
1700